

Listing of Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (currently amended). A reaction product comprising at least

a) acrylic acid or methacrylic acid or a mixture of acrylic acid and methacrylic acid and

b) a (meth)acrylic ester of substituted or unsubstituted phenol, C₁-C₈-hydroxyalkylbenzene or C₁-C₈-hydroxyalkoxybenzene and methyl(meth)acrylate in the ratio (percent by weight) of from 7.1:92.9 to 50:50,

5-90% of the acrylic or methacrylic acid units having reacted with a glycidylvinyl compound and wherein the ratio (percent by weight) of component a) to component b) is from 80:20 to 20:80.

Claim 2 (original). A reaction product according to claim 1, wherein component a) is methacrylic acid.

Claim 3 (original). A reaction product according to claim 1, wherein the (meth)acrylic ester of component b) is benzyl methacrylate.

Claim 4 (original). A reaction product according to claim 1, wherein the glycidylvinyl compound is glycidyl methacrylate.

Claim 5 (cancelled).

Claim 6 (original). A reaction product according to claim 1, wherein the molecular weight of the reaction product is 10000 – 120000 g/mol.

Claim 7 (original). A reaction product according to claim 1, wherein the molecular weight of the reaction product is 20000-90000 g/mol.

Claim 8 (original). A reaction product according to claim 1, which has an acid number of 0.4-5.0 mol/kg, referred to the reaction product.

Claim 9 (withdrawn). A photopolymerizable composition, substantially comprising

- i) a reaction product according to claim 1,
- ii) a monomeric or oligomeric acrylate having at least two ethylenically unsaturated, terminal groups,
- iii) a polymerization initiator or initiator system which produces free radicals, cations or anions and can be activated by actinic radiation and,
- iv) if desired, an organic or inorganic filler.

Claim 10 (withdrawn). A photopolymerizable composition, substantially comprising

- i) a reaction product according to claim 1,
- ii) if desired, a monomeric or oligomeric acrylate having at least two ethylenically unsaturated, terminal groups,
- iii) a polymerization initiator or initiator system which produces free radicals, cations, or anions, and can be activated by actinic radiation,
- iv) if desired, an organic or inorganic filler,
- v) a thermal polymerization inhibitor and
- vi) a solvent or solvent system.

Claim 11 (withdrawn). A photopolymerizable composition, substantially comprising

- i) 15-70% by weight of the reaction product according to claim 1,

- ii) 0-30% by weight of monomeric or oligomeric acrylate having at least two ethylenically unsaturated, terminal groups,
 - iii) 0.1-15% by weight of a polymerization initiator or initiator system which produces free radicals, cations or anions and can be activated by actinic radiation,
 - iv) 0-60% by weight of an organic or inorganic filler,
 - v) 0.01-0.5% by weight of a thermal polymerization inhibitor and
 - vi) 20-80% by weight of a solvent or solvent system,
- the percentages of the components being based on the total weight, with the proviso that the sum of the percentages by weight is 100.

Claim 12 (withdrawn). A process for producing an etch resist image or solder resist image, comprising the process steps of:

- I. Application of a photopolymerizable composition according to claim 10 to a substrate;
- II. removal of the solvent from the applied composition with formation of a film of the photopolymerizable composition on the substrate;
- III. if desired, exposure of the coated substrate to actinic radiation;
- IV. if desired, removal of the unexposed parts of the coating with the aid of an alkaline-aqueous or organic solvent with baring of the substrate; and
- V. if desired, thermal curing and, if desired, UV curing of the coating remaining on the substrate.

Claim 13 (withdrawn). A process according to claim 12, wherein the exposure (III) is effected with the aid of a photomask or directly by means of a laser.

Claim 14 (withdrawn). A process for producing an etch resist image or solder resist image, comprising the process steps:

- I. Application of a photopolymerizable composition according to claim 10 to a substrate by means of an inkjet method;
- II. removal of the solvent from the applied composition with formation of a dried photopolymerizable composition on the substrate;
- III. if desired, uniform exposure of the coated or structured substrate to actinic radiation; and
- IV. if desired, thermal curing and, if desired, UV curing of the coating remaining on the substrate.

Claim 15 (withdrawn). A photopolymerizable element comprising a substrate which carries a photopolymerizable layer, substantially comprising

- A) 25-85% by weight of the reaction product according to claim 1,
- B) 5-40% by weight of monomeric or oligomeric acrylate having at least two ethylenically unsaturated, terminal groups;
- C) 1-25% by weight of an addition polymerization initiator or initiator system which produces free radicals, cations, or anions and can be activated by actinic radiation;
- D) 0-60% by weight of an organic or inorganic filler and
- E) 0.025-1.0% by weight of a thermal polymerization inhibitor;

the percentages of the components being based on the total weight, with the proviso that the sum of the percentages by weight is 100.

Claims 16 (withdrawn). A photopolymerizable element according to claim 15, wherein the thickness of the photopolymerizable layer is 3-50 μm .